

Work Order ID 160190

Friday, April 21, 2017 6:01:09 PM

160190

Page 1

Item ID: 646.3312 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Center Plate
Start Date: 4/25/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 5/19/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference: (P.A) SCHEDULE/c

Approvals: Process Plan: DAS 21 Date: APR 21 2017 Tooling: _____ Date: _____ Run Start ***NR1***
QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
646.3300	N/C3								

100
100 BAND SAW 0.00
Bandsaw Memo 0.06
Jeaspa Bandsaw Cut Blank at 16.300"
*** ONE BLANK MAKES TWO PARTS***

110
110 HAAS CNC VERTICAL MACHINING #1 2.17
HAAS 1 Memo 1.03
HAAS CNC vertical machine #1 1-Machine per folio FB153
DWG REV: W/C
FOLIO REV: AA
2- deburr and break all sharp edges
3-Face to .375" if required

2 _____ 17-05-15
4 10 17-05-17
DAS 20 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
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Large Fab ☐	Composite ☐	Supplier ☐																							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																	
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐													
		OTHER : ☐																							

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Page 2

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC1- Inspection performed by CMM Memo Inspect on CMM as per folio CMMA027. DWG REV: _____ CMM PROG. REV: _____	0.00 0.04				4	0		DAS 20 9-89 / 1705-17
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.08				4	0		DAS 14 9-89 / 17/05/19
140 *140* Outsource4 Outsource process - Anodize	Outsource process-Anodize per QSI017 4.1.10.1 Memo Issue P/O to ATG : <u>36731</u> 1- Black Anodize as per Dwg 646.3300 2- PRIME AS PER DWG, SEE NOTE #2 Certification of Comformity is required	0.00 720.00				4		JUN 16 2017	DAS 13 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : ☐			
Misidentified ☐		Past Due ☐					

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.08							
Packaging									

155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.08							
Quality Control	2.2 thickness primer								

180	Identify as per dwg & Stock Location: CCF103	0.00							
180									
Packaging	Memo	0.04							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

4x 8017-7-10

4
 DAS 38 9-89
 JUL 10 2017

4
 DAS 6 JUL 10 2017
 9-89

DQA: _____ Date: _____



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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.04							
Quality Control									

17/7/12 *[Signature]*
17-07-11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

Picklist Print

Friday, April 21, 2017 6:01:08 PM

Page 1

Work Order ID: 160190

160190

Parent Item: 646.3312

646.3312

Parent Item Name: Center Plate

Start Date: 4/25/2017

Required Date: 5/19/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A NEW ISSUE 12/11/16 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X0.375		Purchased		No		100	f	15.5730	0.68	2.863158			

~~*M7075T6B5.000X0.375*~~

**

7075-T6 BAR 5.000" X 0.375"

~~M7075T6B5.375~~

Location

Loc Qty

Loc Code

MAT005

15.573

m134829

3.291

m135320

1

m136103

0.875

m136303

0.917

m136965

0.698

m137090

8.792

2-729

17-05-15

17.05.05 Please see attach Pablo's E-mail
for material approval.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

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Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

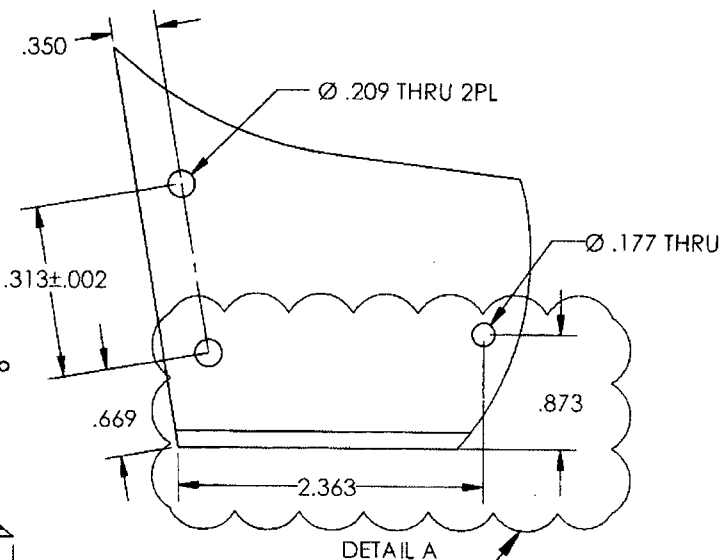
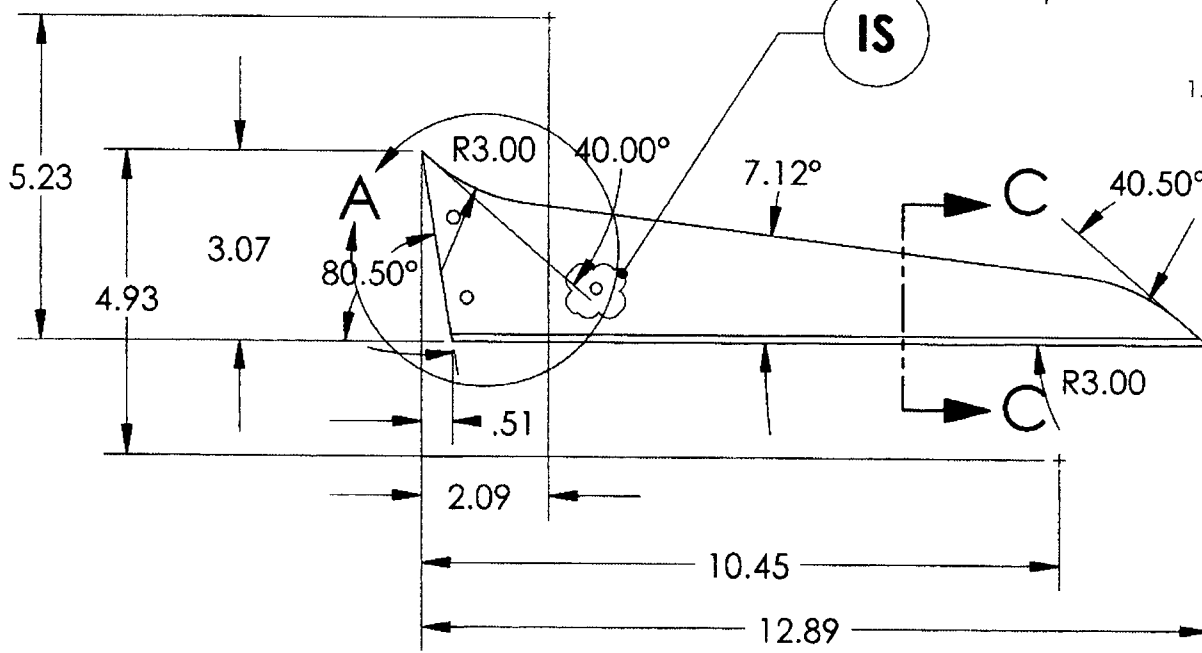
APICAL
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO.		04765		SHEET 1 OF 1	
DWG NO.	646.3300	REV:	NC	PREPARED BY	J. SOTO
DATE:		12/08/2014			
EFFECT ON DWG		☐ INC. ☒ UNINC.			
DWG TITLE: UPPER CUTTER ASSY					
APPROVED BY:	ENGR. <i>[Signature]</i>	MFG. <i>[Signature]</i>	QC <i>[Signature]</i>	EFF. NEXT ORDER	
REASON: ADDED HOLE DIMENSION TO 646.3313.					

TRANSACTION CODES (TC):
A-ADD
R-REVISE
C-CREATE
D-DELETE

SHEET 5 IS:

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 160190 MLS
170424



IS

DOCUMENTS EFFECTED:

☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

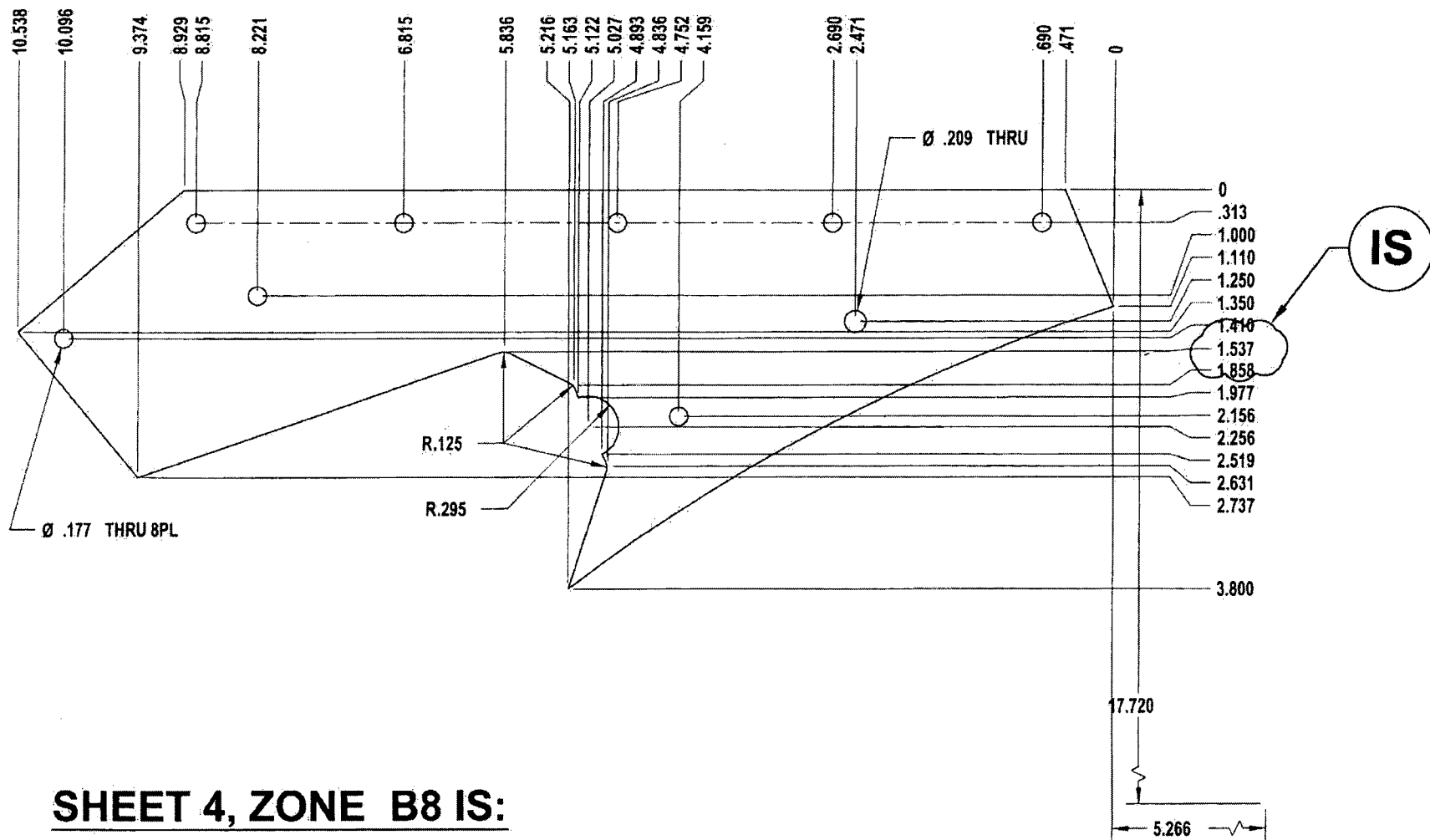
CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03724				SHEET 1 OF 1	
	DWG NO. 646.3300	REV: N/C	PREPARED BY B. PETERS	DATE: 12/05/12	EFFECT ON DWG ☐ INC. ☒ UNINC.	
	DWG TITLE: UPPER CUTTER ASSY					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED ORDINATE DIMENSION.				ECR: D-12-025	

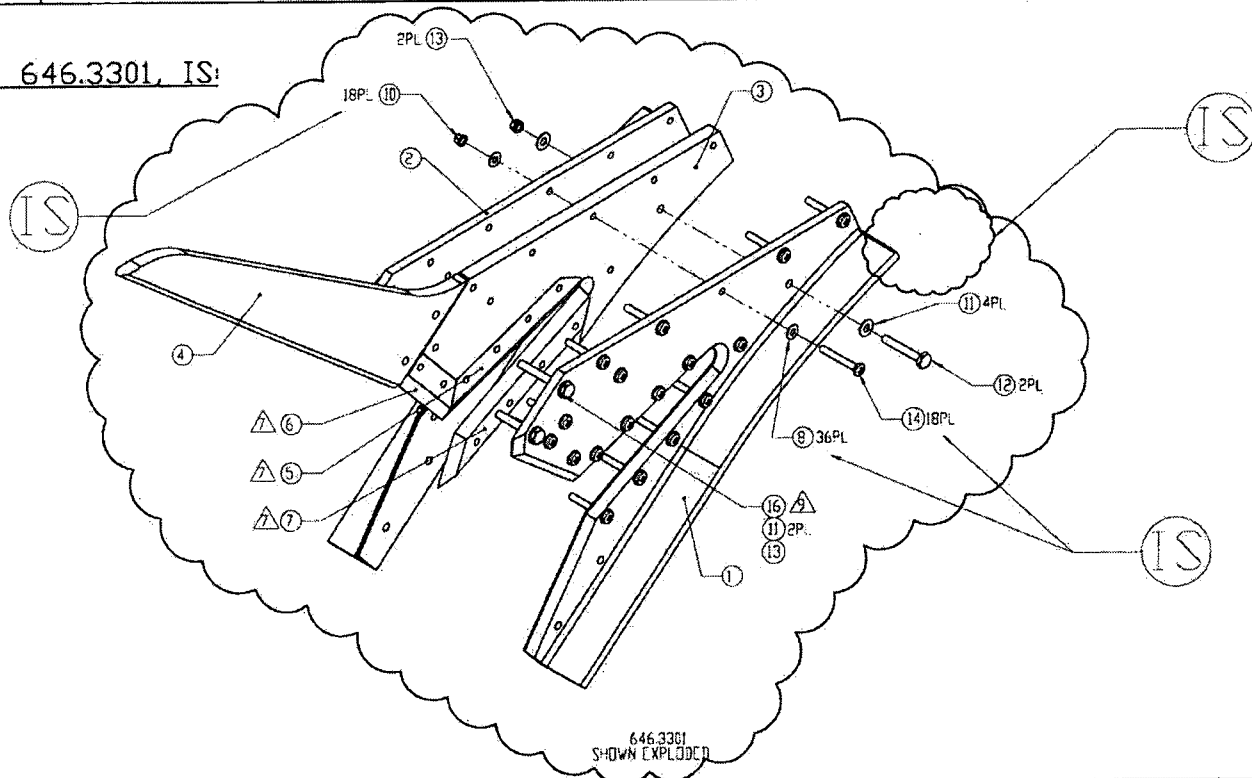


SHEET 4, ZONE B8 IS:

DOCUMENTS EFFECTED:	☐ RFMS ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM	CHANGE CATEGORY ☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED ☐ YES ☒ NO
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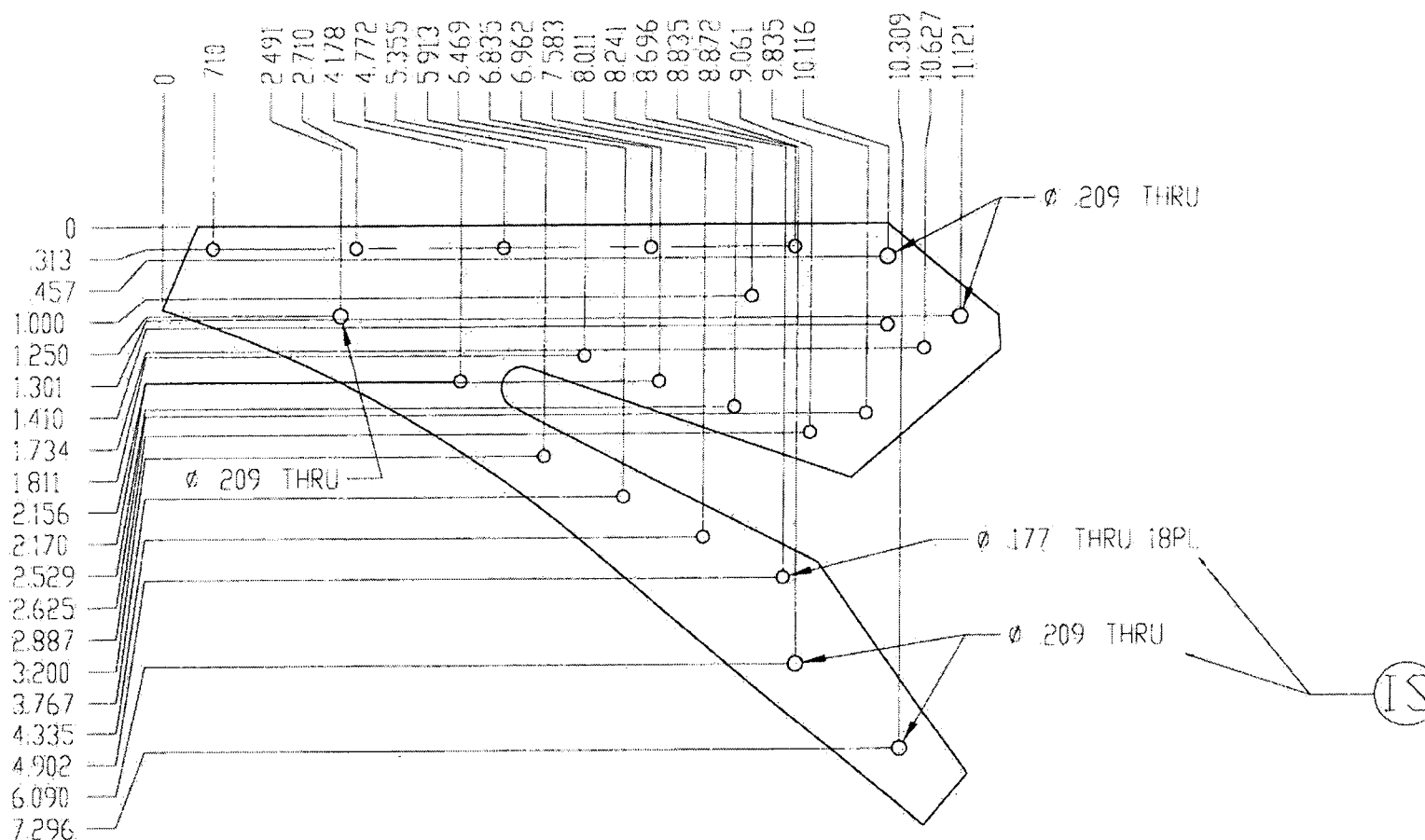
APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02196			SHEET 1 OF 2	
	DWG NO. 646.3300	REV: N/C	PREPARED BY S. HUFF	DATE: 01/05/09	EFFECT ON DWG ☐ INC. ☒ UNINC.
	DWG TITLE: UPPER CUTTER ASSY				
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER	
TRANSACTION CODES (TC) A-ADD C-CREATE R-REVISE D-DELETE		REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS			

SHEET 1, VIEW 646.3301, IS:



14	R	601.2765	18	SCREW	MS27039-0819
10	R	601.1541	18	LOCKNUT	MS21042L08
9	D	601.2766	3	RIVET	MS20470AD5-18
8	R	601.2764	36	WASHER	NAS1149FN832P
			.3301		
F/N TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION	
DOCUMENTS EFFECTED:					CHANGE CATEGORY ☐ MAJOR ☒ MINOR
☐ MDL ☒ INSTALL INSTRUC ☒ ICA ☐ FMS ☒ BOM					DER REVIEW REQUIRED ☐ YES ☒ NO

SHEET 3, SECTION VIEW A-A, IS:

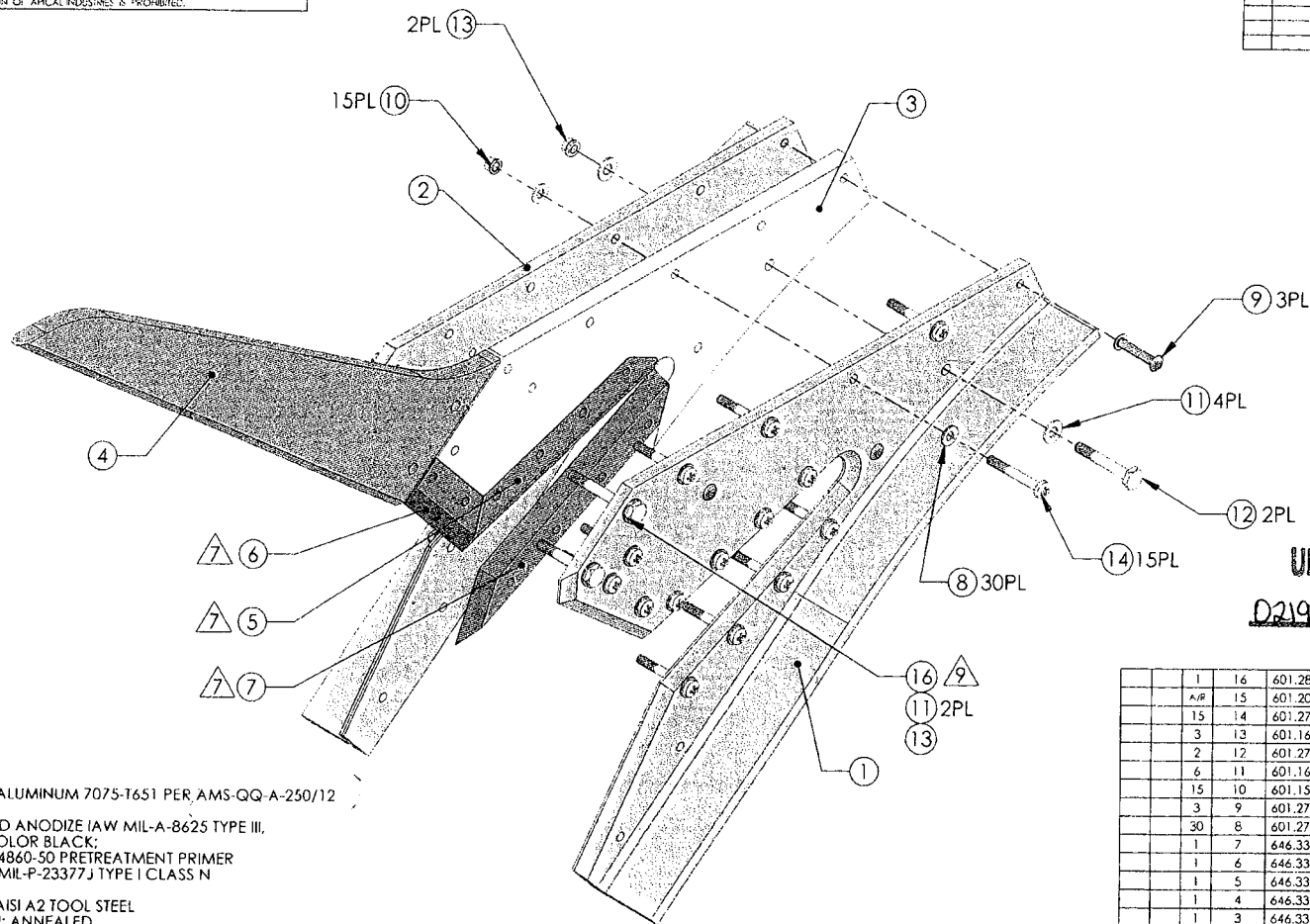


SECTION A-A

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES AND REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



UNINCORPORATED ECN(S)

02196, 03724, 04765

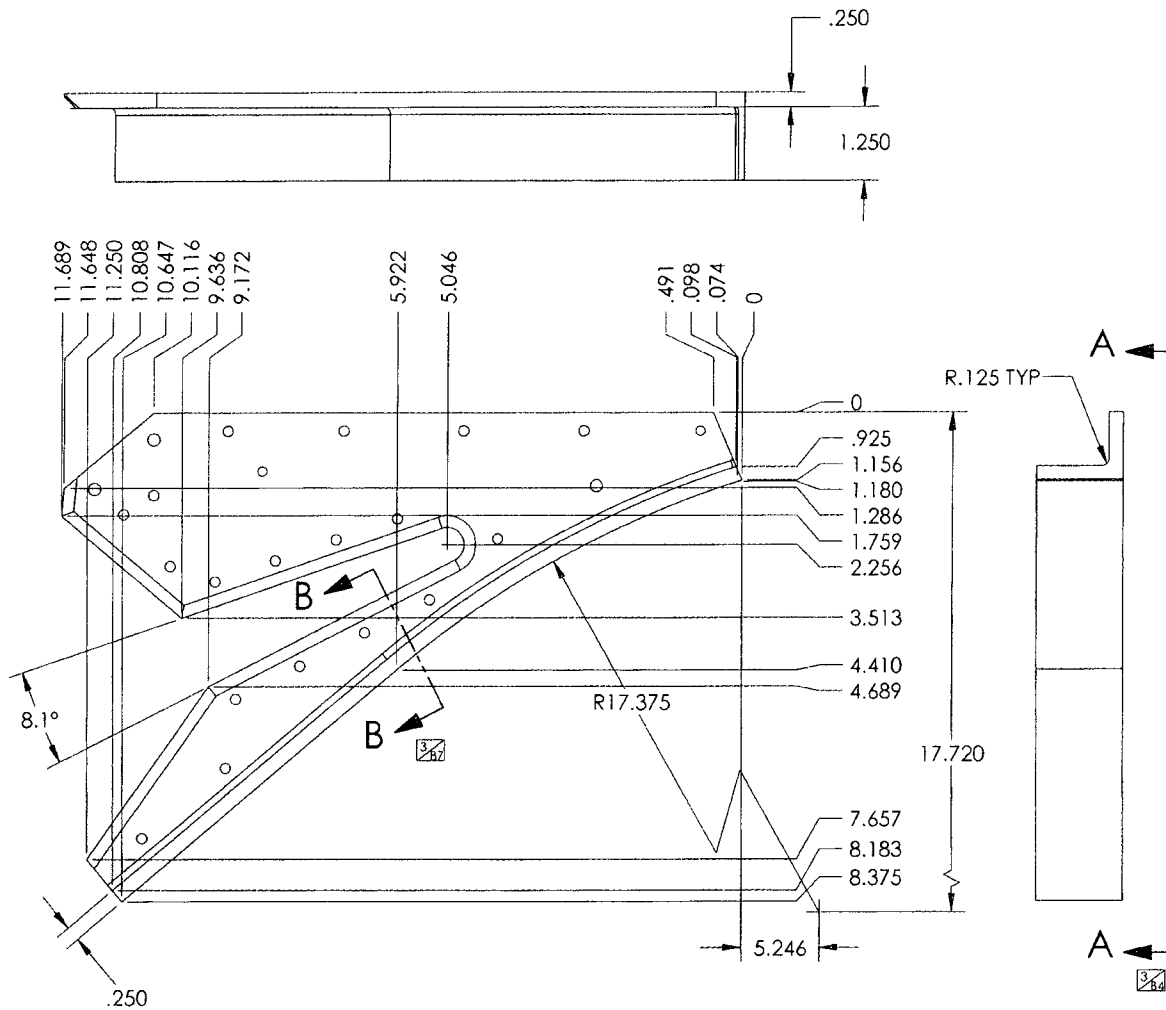
NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 15 AS REQUIRED TO ALL FAYING SURFACES OF F/N 5, 6 & 7 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 INSTALL FASTENER FINGER-TIGHT

646.3301
SHOWN EXPLODED

QTY	ITEM #	PART #	DESCRIPTION	MAT'L	SPEC
1	16	601.2834	BOLT	AMS 104	
15	15	601.2045	RTV, LOCITE 598		
15	14	601.2765	SCREW	MS27031-08 15	
3	13	601.1624	LOCKNUT	MS27045-5	
2	12	601.2763	BOLT	AMS 124	
6	11	601.1607	WASHER	MS111411033P	
15	10	601.1541	LOCKNUT	MS1042-08	
3	9	601.2766	RIVET	MS20470A15-15	
30	8	601.2764	WASHER	MS111411033P	
1	7	646.3316	BLADE		
1	6	646.3315	BLADE		
1	5	646.3314	BLADE		
1	4	646.3313	UPPER GUIDE		
1	3	646.3312	CENTER PLATE		
1	2	646.3311	RH HALF		
1	1	646.3310	LH HALF		
1		646.3301	UPPER CUTTER ASSY		
QTY	FIND #	PART #	DESCRIPTION	MAT'L	SPEC
PARTS LIST					
APICAL INDUSTRIES					
2608 TEMPLE HEIGHTS DR.					
OCEANSIDE, CA. 92056-3512 (760)724-5300					
UPPER CUTTER ASSY					
UNLESS OTHERWISE SPECIFIED					
DIMENSIONS ARE IN INCHES					
FRACTIONS ARE 1/16"					
3 PLACE DECIMALS ± .01					
ANGLES ± .5°					
REV	DATE	BY	CHKD	DATE	REV
8	07/01/06				
SCALE NONE				SHEET 1 OF 8	

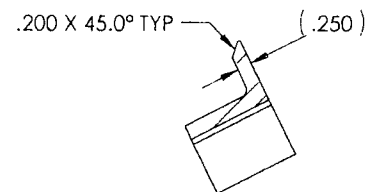
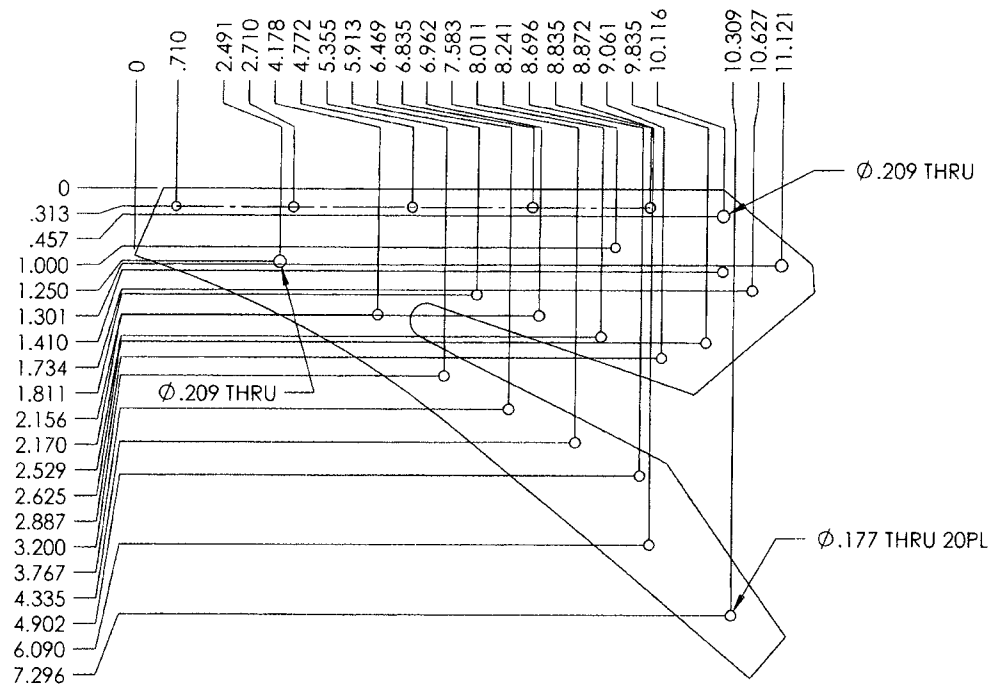
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646.3310 SHOWN
646.3311 OPPOSITE

ORIGINAL DATE: 06-26-08 DRAWN BY: J. B. BROWN CHECKED BY: P. B. BROWN DRAWING APPROVAL: P. B. BROWN CUSTODY NO.:		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
J. B. BROWN SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET: B EACH COPY: 07/12/26 SCALE: NONE	REV: N/C PART NO: 646.3300 SHEET: 2 OF 8
UPPER CUTTER ASSY			

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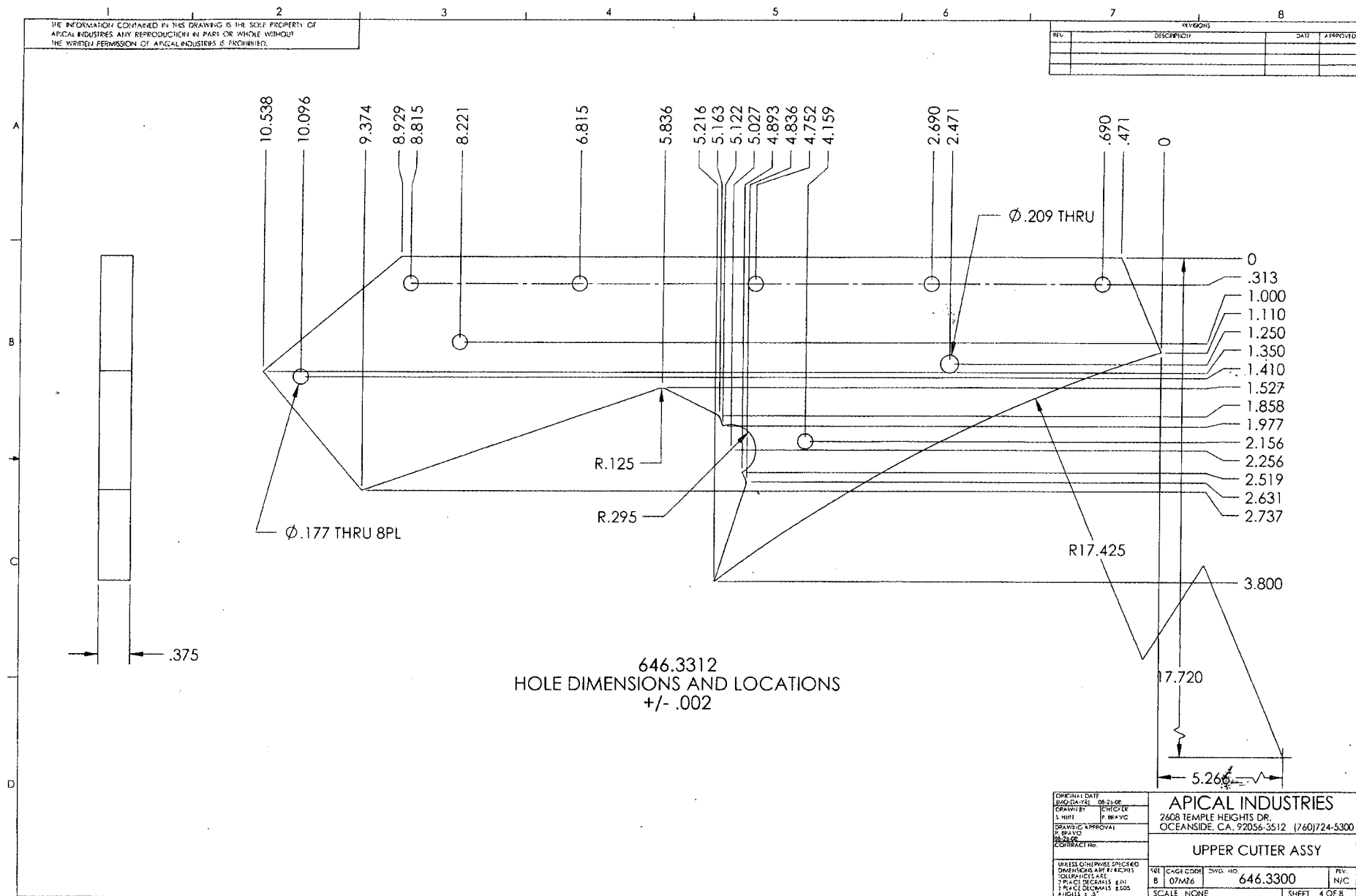
SECTION B-B

SECTION A-A

ORIGINAL DATE 06-26-00		APICAL INDUSTRIES	
DRAWN BY C. HETTER		2608 TEMPLE HEIGHTS DR.	
CHECKED BY P. B. H. V. D.		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY APPROVAL		UPPER CUTTER ASSY	
CONTRACT NO.		646.3300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ± .01 2 PLACE DECIMALS ± .005 FRACTIONS ± .01		SMT B	REV. N/C
SCALE NONE		DATE CODE 07/12/06	SHEET 3 OF 8

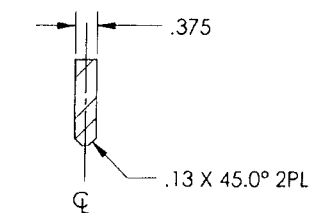
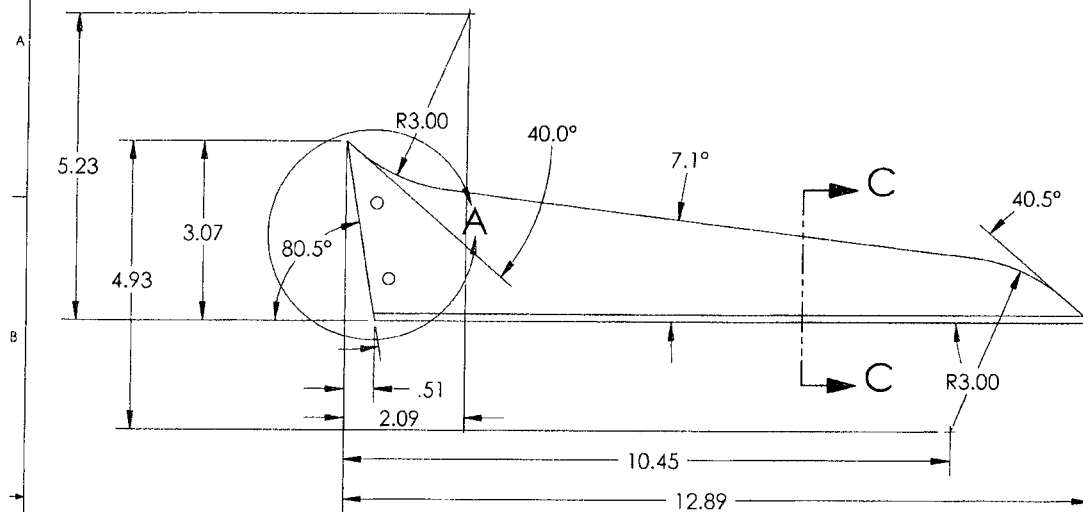
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REV.	DESCRIPTION	DATE	APPROVED

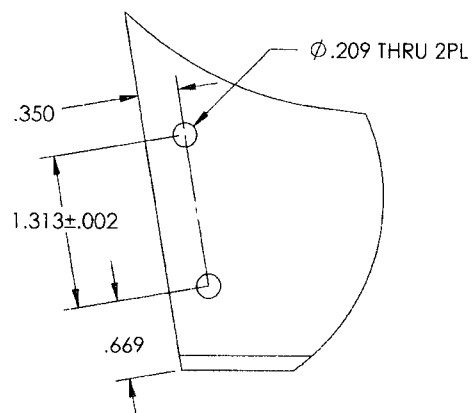


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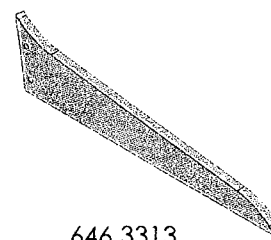
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



SECTION C-C



DETAIL A

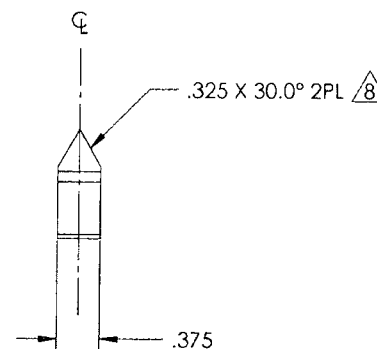
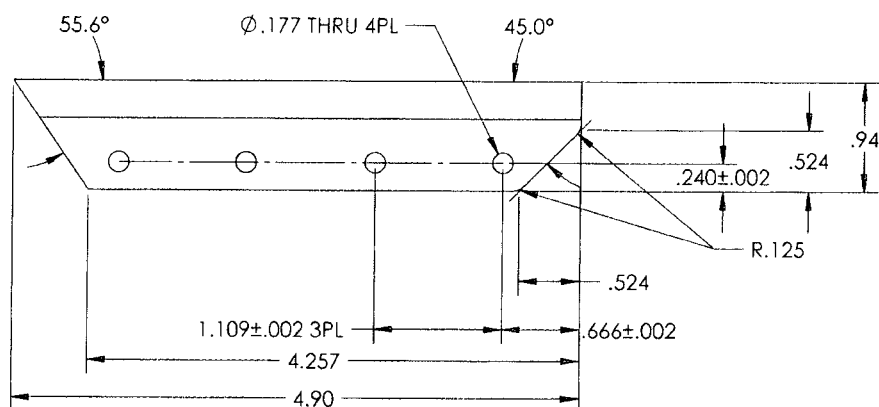


646.3313

ORIGINAL DATE 10-26-05		APICAL INDUSTRIES	
DRAWN BY	CHECKED	2408 TEMPLE HEIGHTS DR.	
DATE	BY	OCEANSIDE, CA, 92056-3512 (760)724-5300	
DESIGNED APPROVAL	BY	646.3300	
DATE	BY	N/C	
CONTRACT NO.		UPPER CUTTER ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ± .001 ANGLES ± .5°	REV	CAGE CODE	DATE
	B	07M26	646.3300
		SCALE	NONE
		SHEET	5 OF 8

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

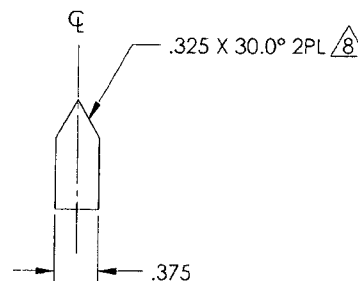
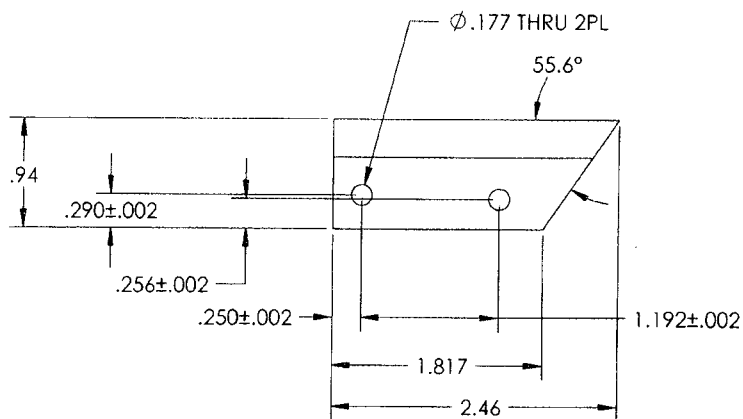
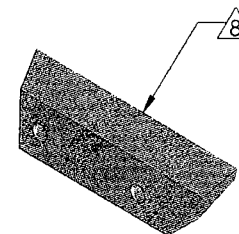


646.3314

ORIGINAL DATE 10/20/08		APICAL INDUSTRIES	
DRAWN BY: J. BRAY		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: P. BRAY		OCEANSIDE, CA 92056-3512 (760)724-5300	
DRAWING APPROVAL		UPPER CUTTER ASSY	
BY: J. BRAY			
DATE: 10/20/08			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 1:1 2 PLACE DECIMALS 1:10 ANGLES 1:1		REV: B	N/C
SCALE: NONE		SHEET 6 OF 8	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

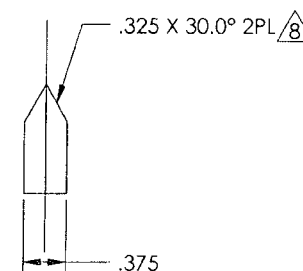
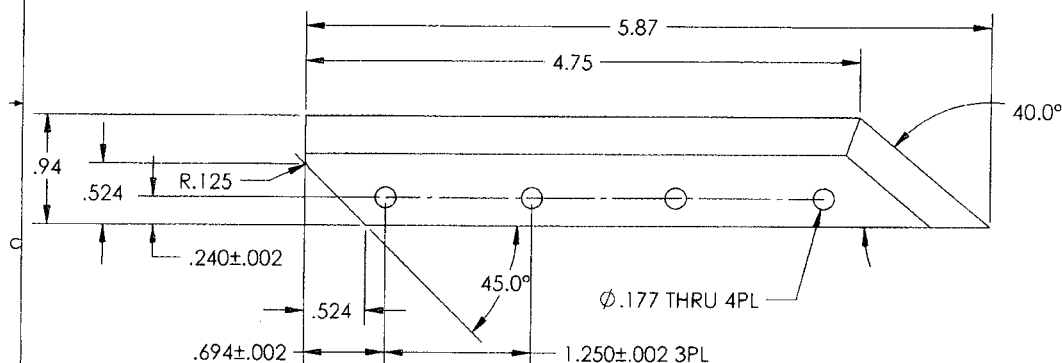
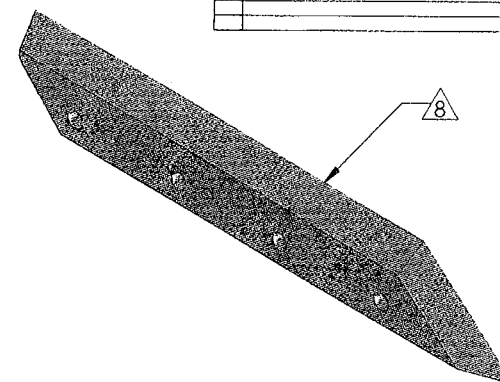


646.3315

ORIGINAL DATE 08-26-08		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY S. H. H.	CHECKED P. BRAVO		
DRAWING APPROVAL P. BRAVO 08-26-08		UPPER CUTTER ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.001 2 PLACE DECIMALS ±.005 ANGLES ± .5		REF. CODE 8 07M26	REV. N/C
SCALE: NONE		SHEET 7 OF 8	

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



646.3316

ORIGINAL DATE 08-26-08 DRAWN BY P. BRAYO CHECKED P. BRAYO DRAWING APPROVAL P. BRAYO CONTRACT NO.		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.003 ANGLES ±.5°		121 B 07M16 SCALE NONE	DWG. NO. 646.3300 SHEET 8 OF 8
UPPER CUTTER ASSY		REV N/C	REV N/C

David Duval

From: Chantal Lavoie
Sent: May-05-17 1:53 PM
To: David Duval
Subject: FW: 17814
Attachments: M7075T6B-RevB.pdf; 646.3000 NC1 Lower Cutter Assy [ECN 02195].pdf; D4842-RevB.pdf

From: Chantal Lavoie
Sent: Tuesday, May 02, 2017 11:57 AM
To: 'Eric Downing' <edowning@dartaero.com>
Subject: FW: 17814

Hi Eric,
Check this e-mail, for 7075-t6 bar or cut from plate.
Thanks
Chantal

From: Chantal Lavoie
Sent: Tuesday, May 10, 2016 1:20 PM
To: Chris Provencal <cprovencal@dartaero.com>
Cc: 'Eric Downing' <edowning@dartaero.com>; Linda Lacelle <llacelle@dartaero.com>; Patrick Smith <psmith@dartaero.com>
Subject: FW: 17814

Hi Chris,
I found another problem when ordering material, see attached for mill spec's 7075-T6.
Material spec's call out 7075-T6/T651 etc..... But with no indication of AMS or QQ-A accepting T651.
Please advise if you can sign deviation would need to order some material.

Note: this material is used for cable cutter part if you look at dwg from Apical (646.3000) they call out 7075-T651 under AMS-QQ-A-250/12, see attached for dwg files.

Dart dwg (D4842) only call out 7075-t6 see attached for dwg files. 95% of 7075-T6 material will be under 7075-T651/AMS-QQ-A-250/12.

Thanks
Chantal

From: Linda Lacelle
Sent: Tuesday, May 10, 2016 1:02 PM
To: Chantal Lavoie <clavoie@dartaero.com>
Subject: FW: 17814

From: Pablo Bravo [<mailto:pbravo@apicalindustries.com>]
Sent: Friday, September 21, 2012 11:08 AM
To: 'Jean-Luc Menard' <jmenard@dartaero.com>; 'Linda Lacelle' <llacelle@dartaero.com>; 'David Shepherd' <dshepherd@dartaero.com>; 'Mike Petsche' <mpetsche@dartaero.com>
Cc: 'Isam El-Kassis' <ielkassis@dartaero.com>; 'Chantal' <clavoie@dartaero.com>; 'Bill Beckett' <bbeckett@dartaero.com>; 'Steve Joseph' <sjoseph@apicalindustries.com>
Subject: RE: 17814

After looking at this more closely, we should be able to use the AMS-QQ-A-250/12 that was originally quoted. No objection on this side to the material change. Let me know what documentation you need to make this happen.

Thanks,

Pablo

From: Jean-Luc Menard [<mailto:jmenard@dartaero.com>]
Sent: Friday, September 14, 2012 5:30 AM
To: 'Linda Lacelle'; 'David Shepherd'; 'Mike Petsche'
Cc: 'Isam El-Kassis'; 'Chantal'; 'Bill Beckett'; 'Pablo Bravo'; 'Steve Joseph'
Subject: RE: 17814

THE 1.250" x 2.00 " would be used on the rail 647.0200.
JL

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Friday, September 14, 2012 7:59 AM
To: 'David Shepherd'; 'Mike Petsche'
Cc: 'Isam El-Kassis'; 'JEANLUC MENARD'; 'Chantal'; 'Bill Beckett'; 'Pablo Bravo'; 'Steve Joseph'
Subject: RE: 17814

JL will get the info on what part it is used in, as the boms are not made yet.
LL

From: David Shepherd [<mailto:dshepherd@dartaero.com>]
Sent: September-14-12 8:12 AM
To: 'Linda Lacelle'; 'Mike Petsche'
Cc: 'Isam El-Kassis'; 'JEANLUC MENARD'; 'Chantal'; 'Bill Beckett'; 'Pablo Bravo'; 'Steve Joseph'
Subject: RE: 17814

Linda,

My understanding is that Pablo Bravo will have to make ALL MRB decisions on the cable cutters since Apical owns the STC.

Therefore, you will need to send an email to Pablo to get a disposition on these types of issues.
What Apical p/n is this for?

PB,

Is the material substitution requested below acceptable?
If not, can you provide guidance on where you were purchasing this material so that Dart purchasing can track it down.

David

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: September-13-12 10:23 AM
To: 'Mike Petsche'
Cc: dshepherd@dartaero.com; 'Isam El-Kassis'; 'JEANLUC MENARD'; 'Chantal'
Subject: RE: 17814

Ok,so where do we go from here?

From: Mike Petsche [<mailto:mpetsche@dartaero.com>]
Sent: September-13-12 11:51 AM
To: Linda Lacelle
Cc: <dshepherd@dartaero.com>; Isam El-Kassis; JEANLUC MENARD; Chantal
Subject: Re: 17814

Cable cutters are largely outside of engineering. We are only manufacturing for apical. Using all apical data.

Sent from my iPhone

On 2012-09-13, at 11:40 AM, "Linda Lacelle" <llacelle@dartaero.com> wrote:

Any news on this pls?

From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: September-11-12 12:57 PM
To: dshepherd@dartaero.com; 'Mike Petsche' (mpetsche@dartaero.com)
Cc: Isam El-Kassis (ielkassis@dartaero.com); JEANLUC MENARD (jmenard@dartaero.com)
Subject: FW: 17814
Importance: High

This is the mat'l for the cable cutters. All 7075 this big is cut from plate. So where do we go from here?

LL

From: Marc Bellavance [<mailto:mbellavance@dartaero.com>]
Sent: September-11-12 12:19 PM
To: 'Chantal Lavoie'
Cc: 'Lacelle, Linda'
Subject: RE: 17814

Chantal,

The mechanical properties of a 1.250" thick plate under AMS-QQ-A-250/11 are below the mechanical properties of a 1.250" thick bar under AMS-QQ-A-225/9 and AMS-QQ-A-200/11 so we can't accept to substitute as proposed below.

Marc Bellavance

Technical/Shop Support

T. 613-632-5200 | C. 613-676-0992 | F. 613-632-9311

1270 Aberdeen Street,
Hawkesbury, Ontario,
Canada, K6A 2K7

**Product Documentation:
Verify Revision
Status/Download [HERE!](#)**

<image001.jpg>

<image002.png> <image003.png> <image004.png> <image005.png>

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Please consider your environmental responsibility before printing this e-mail.

From: Chantal Lavoie [<mailto:clavoie@dartaero.com>]
Sent: Monday, September 10, 2012 2:39 PM
To: Marc Bellavance
Cc: Lacelle, Linda
Subject: FW: 17814

Hi Marc,

Please see attached for p/o:17814, material line 5 and 7 is spec's QQ-A-250-12 acceptable.

Thanks

Chantal

From: Ivers, Stan [<mailto:Stan.Ivers@thyssenkrupp.com>]
Sent: September 10, 2012 1:41 PM
To: 'Chantal Lavoie'
Subject: RE: 17814

Items 5-7 QQ-A- 250-12 is what was quoted please advise will order items 2-4

Thank you

Regards

Stan Ivers
Inside Sales Rep
ThyssenKrupp material NA
905-532-1350
30shi@tkmna.com

From: Chantal Lavoie [<mailto:clavoie@dartaero.com>]
Sent: Monday, September 10, 2012 12:31 PM
To: Ivers, Stan
Subject: RE: 17814

Sorry Stan,
I add send you this order last week please order.
Thanks
Chantal

From: Ivers, Stan [<mailto:Stan.Ivers@thyssenkrupp.com>]
Sent: September 10, 2012 8:07 AM
To: 'Chantal Lavoie'
Subject: 17814

Good morning Chantal

Please advise status on this p.o as nothing is on order and will miss delivery dates

Thanks

Regards

Stan Ivers
Inside Sales Rep
ThyssenKrupp material NA
905-532-1350
30shi@tkmna.com



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36731

Purchase Order Date 6/16/2017

PO Print Date 6/28/2017

Page Number 3 of 16

Order From :

VC-ATG001

Ship To :

DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

160190

646.3312 CENTER
PLATE REV. N/C

7/7/2017

Yes

7/7/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

4.00

\$12.05

\$48.20

DAS
38
9-89

DAS
26
9-89

JUL 10 2017

Line Total:

\$48.20

6 160182

646.3313 UPPER GUIDE
REV. N/C

7/7/2017

Yes

7/7/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N

4.00

\$13.10

\$52.40

Line Total:

\$52.40

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

6/28/2017



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913504

Date: 07-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms	Ship Via
Quantity Description	
Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.	
4 ea	Part: 646.3312 / Rev: N/C Center Plate Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21228 PO: PO36731 Line: 5
9 ea	Part: 646.9710 Rev: D Body Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Job: 21232 PO: PO36731 Line: 9
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>07/07/2017</u> Certified Signature: <u>[Signature]</u> Receiver Signature: <u>DAS 26 JUL 10 2017</u> 9-89 A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.	
Made in Canada.	